

General

Title

Imaging efficiency: percentage of abdomen CT studies that are performed with and without contrast out of all abdomen CT studies performed.

Source(s)

Centers for Medicare and Medicaid Services (CMS). Hospital outpatient quality reporting specifications manual, version 11.0. Baltimore (MD): Centers for Medicare and Medicaid Services (CMS); Effective 2018 Jan. various p.

Yale New Haven Health Services Corporation/Center for Outcomes Research and Evaluation, The Lewin Group. Abdomen CT-use of contrast material (OP-10): 2017 annual reevaluation report. Baltimore (MD): Centers for Medicare & Medicaid Services (CMS); 2017. 24 p.

Measure Domain

Primary Measure Domain

Related Health Care Delivery Measures: Use of Services

Secondary Measure Domain

Clinical Efficiency Measures: Efficiency

Brief Abstract

Description

This measure is used to assess the percentage of abdomen computed tomography (CT) studies performed with and without contrast ("combined studies") out of all abdomen CT studies performed (those with contrast, those without contrast, and those with both). The measure is calculated based on a one-year window of claims data.

Rationale

A computed tomography (CT) abdomen study is a very common imaging procedure in the Medicare population (Levin et al., 2008). The measure seeks to promote the use of CT abdomen imaging that

aligns with current clinical guidance, while avoiding the potentially harmful effects of unnecessary radiation and contrast exposure. A CT study performed with and without contrast doubles the radiation dose to the beneficiary and exposes the beneficiary to the potential harmful side effects of the contrast material itself. Reducing the unnecessary use of combined CT abdomen studies—defined as those that are performed both without and with contrast agents for the evaluation of solid organs and body cavities—represents an important opportunity to improve practice and patient safety.

Evidence for Rationale

Levin DC, Rao VM, Parker L, Frangos AJ, Sunshine JH. Recent trends in utilization rates of abdominal imaging: the relative roles of radiologists and nonradiologist physicians. J Am Coll Radiol. 2008 Jun;5(6):744-7. [PubMed](#)

Yale New Haven Health Services Corporation/Center for Outcomes Research and Evaluation, The Lewin Group. Abdomen CT-use of contrast material (OP-10): 2017 annual reevaluation report. Baltimore (MD): Centers for Medicare & Medicaid Services (CMS); 2017. 24 p.

Primary Health Components

Abdomen computed tomography (CT); contrast material; combined studies

Denominator Description

The number of abdomen computed tomography (CT) studies performed (with contrast, without contrast, or both with and without contrast) (see the related "Denominator Inclusions/Exclusions" field)

Numerator Description

Of studies identified in the denominator, the number of abdomen computed tomography (CT) studies with and without contrast ("combined studies") (see the related "Numerator Inclusions/Exclusions" field)

Evidence Supporting the Measure

Type of Evidence Supporting the Criterion of Quality for the Measure

A clinical practice guideline or other peer-reviewed synthesis of the clinical research evidence

One or more research studies published in a National Library of Medicine (NLM) indexed, peer-reviewed journal

Additional Information Supporting Need for the Measure

See "Abdomen CT—Use of Contrast Material (OP-10): 2017 Annual Reevaluation Report" for a literature review summarizing clinical guidelines and other scientific evidence relevant to the importance and scientific acceptability of this outpatient imaging efficiency measure.

Evidence for Additional Information Supporting Need for the Measure

Extent of Measure Testing

During the measure development process, the Centers for Medicare and Medicaid Services (CMS) completed testing of the measure's specifications, including evaluation of the measure's scientific acceptability and feasibility of implementation by a Technical Expert Panel. A dry run, evaluating measure performance at each facility eligible for public reporting, was performed prior to measure implementation; no major stakeholder concerns were raised about the specifications, feasibility, or usability at that time.

CMS continues to monitor stakeholder inquiries for concerns about measure calculation or scientific acceptability; feedback received through this vehicle can feed into the measure update cycle, as is appropriate.

Evidence for Extent of Measure Testing

McKiernan C. (Consultant, The Lewin Group, Falls Church, VA). Personal communication. 2016 Feb 9. 1 p.

State of Use of the Measure

State of Use

Current routine use

Current Use

not defined yet

Application of the Measure in its Current Use

Measurement Setting

Ambulatory/Office-based Care

Ambulatory Procedure/Imaging Center

Hospital Outpatient

Professionals Involved in Delivery of Health Services

not defined yet

Least Aggregated Level of Services Delivery Addressed

Single Health Care Delivery or Public Health Organizations

Statement of Acceptable Minimum Sample Size

Specified

Target Population Age

Unspecified

Target Population Gender

Either male or female

National Strategy for Quality Improvement in Health Care

National Quality Strategy Priority

Making Quality Care More Affordable

Prevention and Treatment of Leading Causes of Mortality

Institute of Medicine (IOM) National Health Care Quality Report Categories

IOM Care Need

Not within an IOM Care Need

IOM Domain

Effectiveness

Efficiency

Data Collection for the Measure

Case Finding Period

Encounter dates: July 1 through June 30

Denominator Sampling Frame

Enrollees or beneficiaries

Denominator (Index) Event or Characteristic

Diagnostic Evaluation

Encounter

Denominator Time Window

not defined yet

Denominator Inclusions/Exclusions

Inclusions

The number of abdomen computed tomography (CT) studies performed (with contrast, without contrast, or both with and without contrast)

Initial Patient Population: This measure applies only to Medicare beneficiaries enrolled in original, fee-for-service (FFS) Medicare who were treated as outpatients in hospital facilities reimbursed through the Outpatient Prospective Payment System (OPPS). These measures do not include Medicare managed care beneficiaries, non-Medicare patients, or beneficiaries who were admitted to the hospital as inpatients.

Beneficiaries included in the measure's initial patient population had documentation of an abdomen CT performed with or without contrast within a one-year window of claims data. Beneficiaries can be included in the measure's initial patient population multiple times; each abdomen CT (with contrast, without contrast, or both with and without contrast) performed at a facility measured by OPPS is counted once in the measure's denominator.

Exclusions

Beneficiaries who have a clinical diagnosis of one or more conditions for which imaging is considered appropriate are excluded from the measure.

For this measure, beneficiaries whose abdomen CT had one of the following clinical diagnoses recorded on the claim are excluded from the measure's initial patient population; these conditions include adrenal mass, blunt abdominal trauma, hematuria, infections of kidney, jaundice, liver lesion (mass or cancer), malignant cancer of pancreas, diseases of urinary system, pancreatic disorders, non-traumatic aortic disease, and unspecified disorder of kidney or ureter. For all conditions, clinical evidence exists (within a practice guideline or the peer-reviewed literature) that indicates performing an abdomen CT may be appropriate care. Consequently, any beneficiary with one or more of these conditions is excluded from the measure.

Note: Refer to the original measure documentation for Current Procedural Terminology (CPT) and International Classification of Diseases, Tenth Revision (ICD-10) code categories and corresponding organizational ID (OID) codes for the value set in the Value Set Authority Center (VSAC).

Exclusions/Exceptions

not defined yet

Numerator Inclusions/Exclusions

Inclusions

Of studies identified in the denominator, the number of abdomen computed tomography (CT) studies with and without contrast ("combined studies")

Note: Refer to the original measure documentation for Current Procedural Terminology (CPT) and International Classification of Diseases, Tenth Revision (ICD-10) code categories and corresponding organizational ID (OID) codes for the value set in the Value Set Authority Center (VSAC).

Exclusions

None

Numerator Search Strategy

Fixed time period or point in time

Data Source

Administrative clinical data

Type of Health State

Does not apply to this measure

Instruments Used and/or Associated with the Measure

OP-10 Calculation Algorithm

Computation of the Measure

Measure Specifies Disaggregation

Does not apply to this measure

Scoring

Rate/Proportion

Interpretation of Score

Desired value is a lower score

Allowance for Patient or Population Factors

not defined yet

Standard of Comparison

not defined yet

Identifying Information

Original Title

OP-10: imaging efficiency measure: abdomen CT - use of contrast material.

Measure Collection Name

Measure Set Name

Imaging Efficiency

Submitter

Centers for Medicare & Medicaid Services - Federal Government Agency [U.S.]

Developer

Centers for Medicare & Medicaid Services - Federal Government Agency [U.S.]

Funding Source(s)

United States Department of Health and Human Services

Composition of the Group that Developed the Measure

Centers for Medicare & Medicaid (CMS) Contractor

Financial Disclosures/Other Potential Conflicts of Interest

None

Measure Initiative(s)

Hospital Compare

Hospital Outpatient Quality Reporting Program

Adaptation

This measure was not adapted from another source.

Date of Most Current Version in NQMC

2018 Jan

Measure Maintenance

This measure is reevaluated annually by responding to stakeholder input and incorporating advances in the science or changes in coding.

Date of Next Anticipated Revision

Unspecified

Measure Status

This is the current release of the measure.

This measure updates previous versions:

Centers for Medicare and Medicaid Services (CMS). Hospital outpatient quality reporting specifications manual, version 9.0a. Baltimore (MD): Centers for Medicare and Medicaid Services (CMS); Effective 2016 Jan 1. various p.

Centers for Medicare and Medicaid Services (CMS). OP-8: MRI lumbar spine for low back pain -- literature review. Baltimore (MD): Centers for Medicare and Medicaid Services (CMS); 2014 May. 26 p.

Centers for Medicare and Medicaid Services (CMS). OP-8: MRI lumbar spine for low back pain -- specifications. Baltimore (MD): Centers for Medicare and Medicaid Services (CMS); 2014 Apr. 12 p.

Measure Availability

Source available from the [QualityNet Web site](#) .

Check the QualityNet Web site regularly for the most recent version of the specifications manual and for the applicable dates of discharge.

NQMC Status

This NQMC summary was completed by ECRI Institute on August 29, 2012. The information was verified by the measure developer on November 26, 2012.

This NQMC summary was updated by ECRI Institute on May 7, 2014. The information was verified by the measure developer on August 8, 2014.

This NQMC summary was updated by ECRI Institute on December 22, 2015. The information was verified by the measure developer on February 9, 2016.

This NQMC summary was updated again by ECRI Institute on February 22, 2018. The information was verified by the measure developer on April 19, 2018.

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Production

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